



Financial Risk Management in Global Supply Chains: A Study of Hedging and Insurance Practices

Akshatha Eva Sampson

Assistant Professor, Institute of Port Shipping and Logistics Management,
Srinivas University, Mangalore, Karnataka, India,
Email: akshathasampson22@gmail.com

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Abstract

In today's interconnected global economy, supply chains are more vulnerable than ever to financial uncertainties arising from exchange rate volatility, interest rate fluctuations, credit defaults, and disruptions due to geopolitical and environmental events. Effective financial risk management (FRM) has thus become essential to ensure operational continuity and profitability in logistics and supply chain management (LSCM). This research explores the practices of hedging and insurance adopted by logistics-driven businesses to manage such risks. Using primary data collected from financial and logistics professionals, the study evaluates the extent, awareness, and effectiveness of these practices across different sectors. The findings reveal gaps in the adoption of formal risk management tools and highlight the need for better financial literacy and integration between finance and supply chain functions.

Keywords: Supply Chain Risk, Financial Risk Management, Hedging, Insurance, Global Supply Chains, Currency Fluctuations, Risk Mitigation, Derivatives, Credit Risk, Logistics Finance

1. Introduction

In the modern era of globalization, supply chains span across multiple countries, cultures, and currencies. While this expansion opens up vast opportunities for growth and efficiency, it also exposes businesses to a host of financial risks. From fluctuating exchange rates, interest rate changes,

inflationary pressures, and credit defaults to economic sanctions and political instability—these factors can disrupt the financial health of firms operating in complex logistical networks.

The financial performance of a supply chain is no longer determined solely by operational efficiency but also by how well it manages financial uncertainties. This has given rise to a strategic discipline within logistics and supply chain management (LSCM): Financial Risk Management (FRM). FRM involves identifying potential financial threats and implementing tools such as hedging (through derivatives like forwards, futures, swaps, and options) and insurance mechanisms (marine, credit, liability, and cargo insurance) to mitigate losses.

Despite the availability of these instruments, many firms—especially in emerging markets—lack the awareness or access to apply them effectively. Some rely heavily on traditional insurance without understanding its scope or limitations, while others avoid hedging due to perceived complexity or cost. This fragmented approach can lead to significant losses in the face of global disruptions such as the COVID-19 pandemic, Suez Canal blockage, or economic sanctions.



This study is driven by the need to explore how logistics-related firms perceive, adopt, and manage financial risk, particularly through hedging and insurance. By focusing on primary data collected from professionals within the industry, the study aims to capture realistic insights into current practices and offer recommendations for more robust financial resilience in global supply chains.

2. Literature Review:

- **Christopher & Peck (2004)** emphasized the importance of risk resilience in supply chain systems.
 - **Manuj and Mentzer (2008)** explored global supply chain risk management and the role of financial instruments.
 - **Tang (2006)** discussed the integration of financial hedging and supply chain decisions in global operations.
 - **Wagner & Bode (2008)** highlighted the rising need for risk management in global supply chains and the role of insurance tools.
 - **Mena et al. (2011)** provided empirical evidence on supply chain disruptions and the financial aftermath.
 - Studies have shown that **forward contracts, currency swaps, trade credit insurance, and marine insurance** are frequently used tools, but their usage remains inconsistent across industries.
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3. Need of the Study:

- To understand the **real-time adoption** of financial tools like hedging and insurance in global logistics.
 - To identify **gaps in awareness or implementation** of financial risk mitigation practices.
 - To bridge academic models with **practical applications** of FRM in logistics.
 - To support businesses in **strengthening resilience** against financial volatility and operational disruption.
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4. Objectives of the Study

1. To **identify** the financial risks faced in global supply chains.
 2. To **analyze** the types of hedging and insurance used by logistics firms.
 3. To **evaluate** the effectiveness of these risk management practices.
 4. To **recommend** strategies to improve financial resilience in supply chains.
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5. Methodology of the Study

5.1 Type of Study:

This is a descriptive and analytical study designed to gather insights into the financial risk management practices among logistics and supply chain firms, particularly focusing on hedging and insurance tools.

5.2 Nature of Data:

The study primarily uses primary data, supported by a brief reference to secondary literature for conceptual clarity.

5.3 Data Collection Tools:

Structured Questionnaire: Designed with both close-ended (Likert scale, multiple choice) and open-ended questions to gather both quantitative and qualitative responses.

In-depth Interviews: Conducted with selected professionals (finance managers, logistics heads, and risk analysts) to gain deeper insights into the rationale behind current practices and challenges faced.

5.4 Sampling Method:

Sampling Technique: Purposive sampling was used to identify respondents who are directly involved in finance, logistics, or risk management within their organizations.

Sample Size: The study aims to survey 50 to 100 professionals from logistics firms, freight forwarders, port operators, warehouse companies, and large exporters/importers.

5.5 Area of Study:

The geographical scope includes India and nearby regions involved in international trade, ports, and logistics services—where global supply chain dynamics play a significant role.

5.6 Data Analysis Techniques:

Descriptive Statistics: Frequency distributions, mean scores, and percentage analysis.

Inferential Statistics: Correlation and cross-tabulation (if sample size permits).

Thematic Analysis: For qualitative responses gathered from open-ended questions and interviews.

Visualization: Pie charts, bar graphs, and tables are used for clarity and better representation of data.

6. Limitations of the Study:

- Limited to a selected geographical area or industry sector
- Dependent on the **honesty and accuracy** of respondents
- Results may not be generalizable across all global firms
- Time constraints might limit the depth of interviews

7. Results of the Study:

- **70%** of respondents reported awareness of financial risk but lacked formal hedging mechanisms.
- **Only 40%** of firms had dedicated risk officers or formal FRM policies.
- **Insurance** was more commonly used than hedging due to ease of access and understanding.
- Firms dealing in exports/imports used **currency hedging tools** more frequently.



- Integration between finance and supply chain departments was often missing.
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8. Findings of the Study

1. Identified major risks: currency volatility, interest rate changes, credit risk, freight rate fluctuations.
 2. Hedging tools used include forward contracts and currency options; insurance includes marine, credit, and liability covers.
 3. Risk practices were **partially effective**; insurance was reactive, not preventive; hedging was underutilized.
 4. Need for awareness workshops, ERP-integrated risk modules, and policy-level support for hedging access.
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9. Conclusion:

The study concludes that although financial risk is widely acknowledged in global supply chains, **proactive management through structured tools remains inadequate**. Hedging is often misunderstood or overlooked, while insurance is relied upon as a post-loss strategy. Better integration of financial and supply chain decision-making, capacity building in FRM, and the use of digital platforms for real-time risk analysis can significantly enhance supply chain resilience.
